

STATE OF NEVADA  
Department of Conservation & Natural Resources  
DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor  
Leo M. Drozdoff, P.E., Director  
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July 28, 2011

Irwin Kishner  
Herman Kishner Trust  
294 Convention Center Drive  
Las Vegas, NV 89109

Maryland Square Shopping Center, LLC  
c/o Tim Swickard  
Dongell Lawrence Finney LLP  
770 L St., Suite 950  
Sacramento, CA 95814

**Subject:** Draft Work Plan for Mitigation of Indoor Air and Well Water (dated June 28, 2011)  
**Facility:** Al Phillips the Cleaner (former)  
3661 S. Maryland Parkway  
Las Vegas, NV  
**Facility ID:** H-000086

Dear Mr. Kishner and Mr. Swickard:

The Nevada Division of Environmental Protection (NDEP) has reviewed the draft Work Plan for Mitigation of Indoor Air and Well Water (IAWW Work Plan), prepared by Tetra Tech on behalf of the Herman Kishner Trust (Trust) and Maryland Square Shopping Center, LLC. (MSSC), and received electronically by the NDEP on June 28, 2011. This letter provides the NDEP's comments on the IAWW Work Plan. In developing these comments, the NDEP has considered input provided by other parties to the NDEP and, where determined appropriate by the NDEP, has incorporated those comments into this letter.

#### NDEP Comments

Although the revised work plan is much improved over the previous version, there are two main items that need to be addressed before the NDEP can concur with the IAWW Work Plan: (1) the quality assurance and quality control (QA/QC) procedures for the proposed real-time sampling and analysis of indoor air using Method 8021, and (2) conducting a video survey of irrigation well PW-1 located on the golf course.

As for item (1), the NDEP understands the advantage to providing real-time data for multiple samples from a single home; indeed, some homeowners may prefer a method that provides immediate results. The work plan states that 10% of the grab samples will be accompanied by a summa sample to evaluate comparability of the two methods. However, the NDEP requests that you provide the analytical QA/QC procedures and documentation and SOP information (at least equivalent to that provided by Air Toxics for TO-15 summa; the method used by the NDEP) for the real-time sampling. The savings in time and cost need to be weighed against



the uncertainty of introducing a different sampling/analytical method. Also, because the indoor air data will ultimately be used to conduct a human health risk assessment, the quality of the data must be comparable to that collected using a 6-liter summa canister. Please provide an addendum to the work plan that describes the QA/QC procedures and the applicability of these data in a risk assessment.

As for (2), a video survey of golf course well PW-1, this was previously discussed under the Corrective Action Plan (CAP) for Groundwater. NDEP Comment 103 on the CAP stated that:

*“The NDEP notes that the draft CAP does not propose evaluation of the relationship between the shallow groundwater system and the deeper aquifer. Nested wells or piezometers could be installed in the vicinity of the golf course irrigation well, PW-1. Additionally, a video survey of well PW-1 could be performed to evaluate the integrity of the well casing. Understanding the relationship between the shallow and deep groundwater system may be important in addressing groundwater contamination, and should be considered in the CAP.”*

There was no response provided for Comment 103 in the responses to comments submitted along with the June 14, 2011 version of the CAP. At this point, it seems logical to include the video survey and assessment of vertical gradients near PW-1 in the IAWW Work Plan rather than the CAP for Groundwater, because implementation of the IAWW Work Plan will involve drilling on or near the golf course. Also, understanding the vertical migration of the PCE is a facet of plume delineation, and the deep groundwater is a water-supply aquifer. A video survey may discover that the casing in PW-1 is cracked or that the well seal is compromised, rather than plume capture due to drawdown of the shallow groundwater. In fact, a simple analysis of the water level data suggests that there is no drawdown in monitoring wells in the vicinity of PW-1; rather, the irrigation appears to produce a “mounding” effect to the extent that the gradient flattens in this area (see Attachment 1). This may explain the seasonal fluctuations in water level, as seen in monitoring wells near the golf course, as well as the broadening of the plume near Spencer Street.

Finally, two minor notes: (1) For practical purposes and to address analytical uncertainty, homes found to contain 30 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) or more should be offered a mitigation system; (2) Section 2.1 on page 4 states that during well drilling “A toll-free number for NDEP’s public relations officer will also be provided for any questions the residents might have.” The only numbers listed should be for the NDEP’s spill reporting hotline (with a note to call this number if a spill is seen) and the number of the Tetra Tech project manager. Other contact information is listed on the NDEP’s website and will be provided in written materials distributed to the residents by the NDEP.

Other comments on the IAWW Work Plan are provided for the record and do not require a response (see Attachment 1).

The NDEP notes that the Community Relations Plan (CRP) (submitted on February 28, 2011) has been effectively “on hold” while the IAWW Work Plan and the CAP for Groundwater have been undergoing revisions. It will be important to coordinate all activities and schedules for key tasks, and for interactions with the public. The NDEP anticipates that a public meeting will take place this fall, followed by indoor air sampling later this year.

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Mr. Irwin Kishner  
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## NDEP Requirements

Provide addenda to the IAWW Work Plan that (1) describe QA/QC procedures for real-time analysis and the applicability of these data in a risk assessment, and (2) describe a video survey of the golf course well and vertical delineation of the plume near irrigation well PW-1. (NDEP notes that this latter task was originally requested for the CAP for Groundwater; however, it appears to be a better fit in the IAWW Work Plan). These addenda are requested by no later than **August 15, 2011**.

If you have any questions or require additional information regarding this letter, contact me by telephone at (775) 687-9496 or e-mail at [msiders@ndep.nv.gov](mailto:msiders@ndep.nv.gov).

Sincerely,



Mary A. Siders, Ph.D.  
Bureau of Corrective Actions  
Fax (775) 687-8335

Enclosure (1)

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## ATTACHMENT 1

### COMMENTS FOR THE ADMINISTRATIVE RECORD Work Plan for Mitigation of Indoor Air and Groundwater, dated June 28, 2011

Note: these comments are provided for the administrative record and do not require a response.

#### NDEP Comments on the Responses to Comments (RTCs) included in the Work Plan

1. RTCs #1, #7. Although the response states that Figure 1.1 has been updated, it hasn't. The 3<sup>rd</sup> Quarter 2010 data (October 2010) are still used to draw the concentration contours. See, for example, data posted for well MW-26. (Note: Sections 1.0 and 1.2 of the Work Plan reference Figure 1-1).
2. RTC #8h. The passive diffusion bag (PDB) study by Converse (2010) states that each PDB "*covers five feet of water column.*" More detailed profiling during continuous coring and discrete-depth sampling is needed to better understand the role of more transmissive lithologic zones and the distribution of PCE from the surface of the water table downward. From the perspective of vapor intrusion, the concentration of tetrachloroethylene (PCE) and related compounds near the surface of the water table may best reflect the amount of PCE that could volatilize from groundwater and migrate up through the unsaturated soils via diffusion.
3. RTC #29. In reference to consumer sources of PCE in a home (i.e., "background"), the RTCs state that "*...owner-provided information is unreliable in evaluating the potential for indoor sources.*" Although the NDEP acknowledges that the issue of "background" can present challenges when conducting indoor air testing, discussing use and storage of certain consumer products with the homeowner, use of a part-per-billion (ppb) photo-ionization detector (PID) before and after sampling, and an evaluation of the spatial distribution of indoor air data can be used to minimize the complicating variable of background contributions to indoor air.
4. RTC #8h and "Other Notes." Vertical delineation issue was referenced in the Corrective Action Plan (CAP) for Groundwater.

#### Specific Comments on Revised IAWW Work Plan

1. **Figure 1-1** shows concentration contours based on 3<sup>rd</sup> Quarter, 2010 data (i.e., data collected October, 2010), but the footnote to this figure states that data are from 4<sup>th</sup> Quarter, 2010.

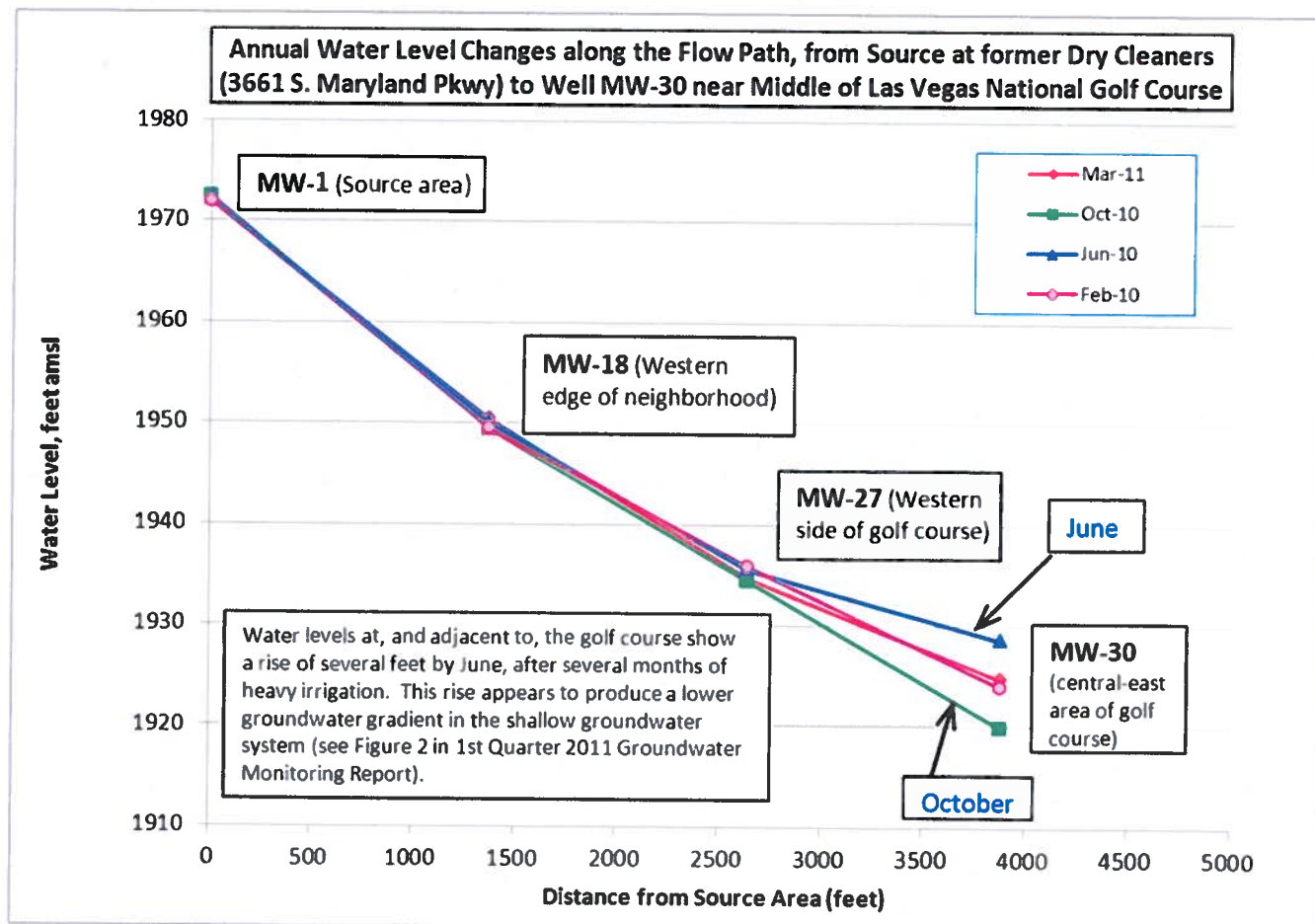
Perhaps a more representative Figure 1-1 could show the average concentrations for recent samples (e.g., all data for 2009 to present) from each well. Such averaged data would provide a figure not seen in the quarterly reports. This concept has been previously discussed and this may be the best document to contain such a figure.

2. Section 1.2, page 2 states "*However, the distal and lateral extents of the PCE plume have not been sufficiently well defined to a concentration of 5 µg/L in two areas: (1) near Maricopa Way, where the PCE plume appears to widen and (2) at the golf course, east of existing monitoring wells MW-30 and MW-31.*"

Data collected from borings installed in 2008 (URS, March) show that the PCE plume extends farther north along Spencer Street than depicted in previous plume maps. Recent quarterly data describe both a lower gradient and a corresponding widening of the plume along Spencer Street near the golf course (see Figures 2 and 3 in the 1<sup>st</sup> Quarter 2011 Groundwater Monitoring Report, and Figures 1-7 and 2-1 in the IAWW Work Plan).

The NDEP has evaluated quarterly water-level data for wells along a longitudinal transect of the plume, from the source area at the former Maryland Square Shopping Center to well MW-30 in the east-central area of the golf course. When plotted as water table elevation versus distance, the data show that the gradient near the golf course flattens during the summer months when irrigation rates are highest (see figure below). These data do not appear to show that the irrigation well creates any drawdown in the shallow groundwater; rather, there appears to be a “mounding” effect that produces a flattened gradient in this area. A seasonally flattened groundwater gradient would result in a decreased groundwater velocity, and this could explain the widening of the PCE plume near the golf course.

These water-level data may also indicate that PCE detected in the golf course well is the result of leakage along a compromised casing or seal (combined with the unfortunate location of the irrigation well in the centerline of the PCE plume), rather than entry into the irrigation well screen at depth, due to vertical migration through more than 500 feet of the geologic deposits. As seen in the figure below, the gradient generally appears uniform across the site, but water level rises in MW-30 during the middle of the irrigation season, indicating mounding rather than drawdown.





3. Section 2.4, Sampling of the New Wells and Spinner/FloVision Logging The NDEP notes that the FloVision tool is typically used to evaluate flow in water-supply wells (i.e., wells with high production; see Foote et al\*). It is unclear whether this tool will be appropriate in small-diameter, poorly producing wells screened in an aquitard.

There are other options for collecting depth-discrete samples ahead of the tool for a sonic drilling rig, for example, and these should be explored.

\*Foote, GR, Bice, NT Rowles, LD, Gallinatti, JD, McAlary, T.A, and Tessman, J.S. *Characterization of TCE and Flow Distribution in a Deep Aquifer Using an Existing Water Supply Well*. pages 139-153.  
<http://info.ngwa.org/gwol/pdf/950161642.PDF>

4. Section 3.0, page 8. The header for this section still states “INDOOR AIR AND SOIL VAPOR SAMPLING PLAN” even though the soil vapor sampling component has been eliminated. Please revise section header accordingly.
5. [Editorial comment] Section 4.0, page 14, states that “*Indoor air concentrations of PCE and daughter products trichloroethylene (TCE), 1,2-cis-dichloroethylene, and vinyl chloride will be monitored by collecting air samples from individual homes located over the PCE plume to assess human health risk associated with indoor air exposure. Required data includes:*
- *Collecting indoor air samples from homes in accordance with the proposed (and presumably pending concurrence) Indoor Air Monitoring Program;*
  - *Collecting background (i.e., upwind) ambient samples for the same time period; and*
  - *Performing an in-home survey of activities/hobbies and checking for indoor sources of the four compounds.*

Consider rewriting to state “*Information to be collected for use in the risk assessment includes the following:*

- *Analytical data for PCE and its degradation products in indoor air samples.*
  - *Analytical data for PCE and its degradation products in outdoor air (i.e., ambient) samples.*
  - *An in-home survey to provide information on potential “background sources” within the home, as well as occupant hobbies and/or activities that may affect indoor air quality.*
6. Section 4.0, page 14, states that “*The Johnson and Ettinger (J&E) model will be used to back calculate the target ground water remediation goal using PCE at  $41 \mu\text{g}/\text{m}^3$  ( $10^{-4}$  risk factor) and  $0.41 \mu\text{g}/\text{m}^3$  ( $10^{-6}$  risk factor) inputs to assess the range of related PCE concentrations in groundwater (i.e., the remedial clean-up goal). This will also be performed for daughter products of PCE.*”

The NDEP suggests that target remediation goals for groundwater be provided corresponding to the  $10^{-4}$ ,  $10^{-5}$ , and  $10^{-6}$  risk levels for PCE in indoor air.

7. Section 4.0 text continues, stating that “*Concentrations in the Boulevard Mall will be modeled with the J&E model using modified air exchange rates for commercial/industrial buildings, commercial/industrial exposure scenario, and estimated indoor air volume of the Mall.*”

The NDEP is not requiring sampling or modeling concentrations inside the mall, and an evaluation of commercial exposures is not requested by NDEP at this time.

8. Section 5.0, page 15, states that *"If indoor air PCE concentrations at a home are found to exceed the Interim Action Level of 32  $\mu\text{g}/\text{m}^3$  or the remediation standard (once established), the SSD system will be evaluated and optimized as necessary to bring the indoor air concentrations into compliance."*

The NDEP notes that subslab depressurization (SSD) systems were designed to reduce concentrations of PCE in indoor air to less than the interim action level (32 micrograms per cubic meter [ $\mu\text{g}/\text{m}^3$ ]), not necessarily to less than the remediation standard, which has not yet been determined (TBD). The remediation standard is the goal for all homes, following cleanup of groundwater.

9. Section 5.0, page 15, last paragraph, states that *"Indoor air in homes will be re-sampled after corrections only if PCE concentrations in indoor air were above the Interim Action Level of 32  $\mu\text{g}/\text{m}^3$  or the remediation standard prior to the corrections."*

The phrases in red font are incorrect; SSD systems must achieve the interim action level. (The NDEP notes here that, for practical purposes, 30  $\mu\text{g}/\text{m}^3$  rather than 32  $\mu\text{g}/\text{m}^3$  was used to trigger offer of an SSD system). Ultimately, all homes must achieve the remediation standard for indoor air; however, that is not anticipated until groundwater is sufficiently remediated. The phrases regarding the remediation standard may be deleted from this context.

10. Section 6.0, page 16, states that *"When the leading edge of the PCE plume in groundwater is sufficiently defined at the 5  $\mu\text{g}/\text{L}$  boundary, a survey will be conducted to identify domestic wells located to the east of the plume, mainly in the area east of south Eastern Avenue (Ave.)."*

The NDEP notes that wells located within the 5  $\mu\text{g}/\text{L}$  plume boundary and close to this downgradient boundary (not just wells "located to the east of the plume") should be field-checked.

## Figures

11. NDEP Comments 1 and 7 and Figure 1.1. Although the responses to NDEP Comments 1 and 7 agree to the change, the plume contours in Figure 1-1 still reflect data for 3<sup>rd</sup> quarter 2010. That is, contrary to the footnote on Figure 1-1, the data shown are for the 3<sup>rd</sup> quarter 2010.
12. Figure 1-1 brings up an interesting point that has been verbally discussed; that is, using some form of the "average" concentration to draw the plume contour. Although the NDEP does not think this is appropriate for the quarterly reports, this concept may be useful for the IAWW work plan.
13. Figures 1-7 and 2-1 show monitoring well MW-11 as not being part of the groundwater monitoring program. This is incorrect. Well MW-11 is sampled annually, per NDEP's requests in several letters (June 10, 2010; September 10, 2010; February 3, 2011; May 4, 2011). Please color code well MW-11 on these figures to show it as part of the monitoring program.